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ABSTRACT

One of 52 theoretical papers on school crime and its relation to poverty, this chapter presents an aesthetic theory of vandalism and reports nine original empirical studies that are relevant to the theory. It is proposed that the act of destroying an object is enjoyable because it is, in effect, an aesthetic experience. The essay is divided into five sections. First, some comments are offered concerning existing theories and, by way of contrast, pointing out the distinctive characteristics of the environmental or stimulus-centered approach. Second, an aesthetic theory of destruction is presented and applied to the specific problem of vandalism in the schools. The third and central section reports several new empirical studies that tested the predictions made from the aesthetic theory of vandalism. Finally, in the last two sections, further research is discussed and several suggestions consistent with this theoretical approach are offered for mitigating vandalism in the schools. (Author/MLF)

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# THEORETICAL PERSPECTIVES

ON

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# AN AESTHETIC THEORY OF SCHOOL VANDALISM

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## ABSTRACT

This paper presents an aesthetic theory of vandalism and reports nine original empirical studies that are relevant to the theory. It is proposed that the act of destroying an object is enjoyable because it is, in effect, an aesthetic experience. The theory posits that the variables accounting for the pleasure associated with socially acceptable aesthetic experiences are similarly responsible for the pleasure associated with acts of destruction. Previous theory and research in aesthetics have identified many of the important variables responsible for the positive affect that accompanies an aesthetic experience. These variables are stimulus characteristics such as complexity, expectation or uncertainty, novelty, intensity, and patterning. These variables may also account for the positive affect produced by the destruction of an object. According to the theory, vandalism is caused in part by the enjoyment derived from the psychological processes manifested during the destruction of an object. Furthermore, aesthetic variables present in an object's initial appearance and in its appearance after being vandalized may serve as eliciting or discriminative stimuli for destructive behavior. Several studies provide support for hypotheses posed by the aesthetic theory of vandalism. A series of three experiments investigated stimulus complexity during the breaking of an object as one important factor influencing preference for destruction of an object. Expectation and type of material were studied in other experiments. Still other studies examined the importance of the initial pattern of organization of an object as a determinant of the choice of target from among several potential objects of destruction. An interview study also explored several of the major variables specified by aesthetic theory. A final section discusses several implications of the theory in terms of practical measures which could contribute to the reduction of vandalism in the schools.

## Introduction

> "We would always tear things down. That would make us laugh and feel good..." Members of a boys' gang. (Thrasher, 1936, p. 95)
>
> "To have fun. They thought it was a big joke breakin' things. Somebody said, 'Let's break the winders.'" Boy explaining the reason for incident of school vandalism. (Martin, 1961, p. 103)
>
> The urge to destroy is a creative urge. (Bakunin, 1842)

This paper presents a new theory of school vandalism that departs substantially from previous analyses. A deeper theoretical exploration into this obstinate and perplexing problem may increase understanding and, at the same time, yield practical implications for implementing changes in environmental design, architecture, and curriculum. We hope that such theoretically derived changes can influence behavior in such a way as to decrease the ravages of vandalism; in the words of Hogben (1940), "the real credentials of a science lie in its capacity to yield information which is a guide to practical conduct" (p. 189).

To accomplish the goals of both theory and application, the present essay is divided into five sections. First, some comments are offered concerning existing theories and, by way of contrast, pointing out the distinctive characteristics of the environmental or stimulus-centered approach.

Second, an aesthetic theory of destruction is presented and applied to the specific problem of vandalism in the schools. The third and central section reports several new empirical studies that tested the predictions made from the aesthetic theory of vandalism. Finally, in the last two sections, further research is discussed and several suggestions consistent with this theoretical approach are offered for mitigating vandalism in the schools.

## Current Explanations of Vandalism

A large number of reasonably precise and sophisticated definitions of vandalism have been offered, but we cannot quibble with the common usage of the term to designate the illegal destruction of property not belonging to the person who destroys it. In the case of the school, an astounding variety of acts of destruction have been directed toward buildings, grounds, and equipment. The targets seem limited only by the fertile imagination of the perpetrators. Among the most common objects of school vandalism are windows, signs, walls, trees, turf, playground, shrubbery, furniture, light fixtures, toilet fixtures, lockers, thermostats, and even flagpoles--to mention only a few.

Vandalism often carries the connotation of being a senseless, meaningless, or wanton act of destruction. Perhaps this impression is due to the appearance (to the

outside observer, a posteriori) that economic or personal gain is not the primary goal of vandalism. Still, an act that seems motiveless to an observer may be meaningful and sensible to the participant. Therefore, we should not subsume under a single rubric a host of destructive acts which differ radically in motive, meaning, and consequences. Recognition of the heterogeneous nature of vandalism has led investigators to develop several typologies and classifications in an attempt to bring some order out of the apparent chaos.

## Typologies and Theories

Among the many available typologies of vandalism there is little reason to recommend one over the other, since they all are based on different data as well as rather arbitrary assumptions. Nevertheless, it will be informative to mention some of the more prominent typologies that have been suggested recently by investigators working in the area.

After examining a variety of reported acts of vandalism, Madison (1970) concluded that there are three types:

(1) erosive vandalism--small acts that in combination finally lead to damage;

(2) fun vandalism where no harm is intended; and

(3) angry vandalism where harm is intended.

After analyzing many acts of vandalism committed by juveniles, Martin (1961) also posited three main types:

(1) predatory, for economic benefit;

(2) vindictive; and

(3) wanton (acts not covered by the other two types).

A tripartite typology proposed by Wade (1967) directed attention to the origin and the sequential stages involved in vandalism, separating acts into those that

(1) are planned deliberately;

(2) occur fortuitiously (e.g., in play); or

(3) serve as a catalyst for other behavioral acts.

The most extensive and sophisticated typology was suggested by Cohen (1973). He proposed six basic types of vandalism:

(1) acquisitive--to acquire property;

(2) tactical--to gain something other than property or money;

(3) ideological--to further an ideological goal;

(4) vindictive--to obtain revenge;

(5) play--to damage during play; and

(6) malicious--to destroy as a result of aggression and anger.

A typology or classification serves the important function of reminding us that the term "vandalism" conceals many differences among acts of property destruction; for scientific purposes, it is worthwhile

to differentiate among acts that might otherwise be seen as members of a homogeneous class. However useful it may be, a typology must still be considered only as a very primitive and pretheoretical analysis of a phenomenon--it is merely descriptive, not explanatory. Without an explication of underlying psychological processes and a specification of the relation between antecedent and consequent variables, a conceptual scheme will possess only meager scientific value.

Since vandalism is a complex behavioral phenomenon, a single theoretical explanation is unlikely to be sufficient to account for all types of acts. Available theories are severely limited because they tend to take a single type of vandalism as their referent, and ignore the other types. Theories have focused on psychological processes occuring within the individual, group processes, and broader factors in the social structure. Because of limitations of space, we can allude only to some of the current theories of vandalism.

Many theories seek causal processes in personality dynamics such as diffuse anxiety or hostility, inferior self-concept, risktaking ("kicks"), and various forms of personal and social maladjustment (Feldman, 1969; Haskell & Yablonski, 1974; Reiss, 1952). Other theories, though focusing at the level of the individual, devote more attention to attitudes, values, and situational factors.

Examples of such theories are frustration/aggression, which subsumes revenge and displaced or symbolic aggression (Berkowitz, 1962), instrumental aggression in the service of other ends (Cohen, 1973), and anonymity or deindividualization (Zimbardo, 1969). Group-centered explanations tend to emphasize the role of interpersonal processes, such as conformity to group norms, status enhancement in the group, and imitation or social contagion (Wade, 1967). At the social-structure level, anomie, class and ethnic problems, and economic or historiocultural factors have been suggested as contributing to vandalism (Merton, 1957; Miller, 1958; Wolfgang & Savitz, 1970).

We cannot deny that these theories may explain some acts of vandalism by some persons some of the time. Most of the theories, however, limit themselves to the specific type of act which they can explain best. Also, some theories may be applicable at one stage of an act of vandalism but not at others. Acutely embarrassing to most theories of vandalism is the failure adequately to account for either selectivity among potential targets generally (e.g., school instead of warehouse) or among more specific aspects of the target itself (e.g., a particular portion of a building). Some theories have difficulty explaining why particular juveniles are involved in vandalism

rather than others. Theories that concentrate on intrapersonal dynamics do make an attempt to account for individual differences (usually after the fact), but they are at a loss to account for variations in time and place. In short, each of the current theories of vandalism could be criticized extensively, but suffice it to say that a satisfactory general theory of vandalism does not yet exist. It is reasonable to assume that in any given case a number of factors probably operate in an additive fashion, which is another way of saying that multiple causation is likely to be true in vandalism as it is in other complex forms of social behavior.

An Alternative Approach

The aesthetic theory of vandalism presented here is not intended to be a simple and sovereign explanation for all acts of vandalism in the schools. Instead, it attempts to provide some understanding of the role of environmental or stimulus characteristics in destruction. Not to be overly modest, however, we should also point out that existing evidence does suggest that the variables identified by our theory may play a very important role in vandalism. According to this theory, the act of vandalism will be affected by psychological factors that are intrinsic to the process of destruction itself; these

factors render the act an enjoyable experience. Furthermore, aesthetic variables represented in the initial and postdestruction appearance of an object may influence destructive behavior by serving as eliciting or discriminative stimuli.

It is important to emphasize two distinctive characteristics of our theory of vandalism. First, it focuses on distal factors intrinsic to the stimulus itself, rather than on processes within the individual. Second, the theory assumes no discontinuity between the psychological processes involved in vandalism and in more socially acceptable behavior. On the contrary, it stresses the underlying normality and universality of the aesthetic processes in destruction.

## The Aesthetic Theory of Vandalism

Abundant anecdotal evidence points to the importance of one factor in vandalism that has been ignored by previous theories: the sheer enjoyment experienced during the destruction of an object. That is, an individual frequently finds the act of destruction to be very pleasurable as an end in itself.[1] A perusal of data from

[1] In the final episode of the BBC television documentary of World War II ("World at War") an officer commented on the evident pleasure and enjoyment that allied soldiers obtained from inflicting extensive destruction on an area as they were moving through it. This is a dark issue that has never been openly acknowledged nor discussed.

case reports reveals many instances in which youngsters, in the course of discussing their own acts of vandalism have made unsolicited comments indicating that the episode was simply (in their terminology) "fun." Recognizing the positive affect that vandals seem to obtain from their acts, some investigators have called vandalism "wreckcreation" (Bennet, 1969). The assertion that destruction is enjoyable does not by any means end our inquiry; it is only the beginning. An answer is sought to a crucial question: Why is destruction often such a pleasant experience? To find an adequate answer we must search beyond the obvious surface variables and explore the deeper factors which, though less obvious, are intrinsic to the destructive process itself.

We suggest that the variables that account for the positive affect which accompanies socially acceptable aesthetic experiences are likewise responsible for the pleasurable affect associated with socially unacceptable acts of destruction. We say, therefore, that destruction of an object is enjoyable because it is in effect an aesthetic experience. Thus, we hypothesize that the variables that determine whether or not an act is aesthetically pleasing will also determine whether or not a destructive act is pleasing. Artists as well as psychologists have noted that there seems to be,

paradoxically, a close affinity between art and destruction--or more generally between creative and destructive acts. (For example, the Museum of Modern Art in New York City once displayed a wrecked car in its gallery as a work of art.) Of course, in terms of our theory there is no paradox; in both construction and destruction, the novel transformation of material into new structures activates the same set of psychological variables.

Theory of Aesthetics

Recent developments in psychological research in aesthetics and related areas have pointed toward several basic variables that are critical determinants of affective responses to objects. The elements of aesthetic theory that are relevant to an understanding of vandalism will be briefly presented in this section.[2]

According to the theory of aesthetics propounded by Berlyne (1971), the positive hedonic value (pleasure or reward) of a stimulus is determined by its potential for eliciting arousal or dearousal. Research has revealed that both these mechanisms (arousal and dearousal) can produce positive affect under specified conditions. An increase in arousal will be experienced as pleasurable to a point

[2]A more detailed exposition of current aesthetic theory can be found in a recent book by Berlyne (1971).

of very high arousal. Beyond this point, however, any further increase in arousal will be unpleasant, and a decrease in arousal will be pleasurable. Thus, the relation between hedonic value and activation can be represented by the familiar inverted U-shaped curve found so often in research on motivation.

Research has shown that several variables produce an increase in arousal, and that others produce a decrease in arousal. Many of these variables are primarily relevant to music or literature and are not directly applicable to our interest in the destruction of objects in the environment. Of greater importance to our theory are certain structural properties of a stimulus that will increase arousal, thereby producing a positive affective response (pleasure or enjoyment) under the normal range of activation. The most important stimulus properties that contribute to positive hedonic value can be equated with a few basic structural or formal qualities of a stimulus. Foremost among these are complexity, expectation, and novelty.[3] Two other variables of lesser importance are organization (e.g., patterning or grouping) and

[3]Variables such as complexity, expectation, and novelty are called "collative" stimulus properties by Berlyne (1971). To respond to such variables, a person must compare the existing stimulus elements with others present in the background or with the preceding stimuli--hence the word "collative" to indicate the necessity of comparing (or collating) the elements.

psychophysical characteristics (e.g., intensity or size). It is obvious that all these factors are not completely independent in a conceptual sense or in actual behavior; nevertheless, it will facilitate the discussion to present each of them separately.

Complexity. One of the central variables responsible for the positive hedonic value of a stimulus object is its degree of complexity. All theorists who discuss aesthetics give ample credit to the complexity/simplicity dimension, which is strongly related to one's judgment of the pleasingness or interestingness of an object ("beauty"). Complexity can be defined objectively or subjectively. In objective terms, complexity increases directly with the number of independent elements and indirectly with redundancy (similarity) among the elements. Complexity of stimuli can be measured subjectively by asking judges to rate a stimulus along a scale ranging from very complex to very simple. A large number of studies have investigated complexity by using visual, auditory, and literary material. Persons report greater interest and liking for complex than for simple stimuli. In addition, studies measuring exploratory behavior have found that individuals spend more time looking at or listening to complex visual and auditory patterns than to simple ones.

Expectations. A second important structural variable, expectation, refers to one's anticipation concerning a stimulus event. (Expectation, predictability, and certainty are terms that are closely related and which overlap.) The disconfirmation or violation of an expectation creates arousal, and hence a positive affective response. In common parlance it would be correct to say that disconfirmation of an expectation creates "surprise." Perhaps the most common method for establishing an expectation is by repeated experiences. Incongruity is one instance of violation of expectations based on past experiences. For instance, an incongruent picture (such as one showing the trunk of an elephant attached to a horse) produces strong surprise. One study found that subjects inspected an incongruous stimulus for a longer period of time than a less incongruous one (Nunnally, Faw, & Bashford, 1969). Research has shown that a moderate degree of uncertainty or surprise will arouse stronger positive affect than either very high uncertainty (extreme unpredictability) or very low uncertainty (extreme predictability).

Novelty. The third structural variable to be discussed, novelty, refers to the newness of a stimulus. Novelty has long been recognized as playing a powerful role in many areas of aesthetics. Novelty is usually not absolute (i.e., completely novel); it is most often either a

combination of previously experienced individual elements or a stimulus intermediate between familiar ones. Subjects show a rapidly diminishing level of interest and arousal (and pleasure) after repeated experiences with a novel stimulus (Berlyne & Parham, 1968).

Psychophysical Properties. The pleasantness of a person's reactions to a stimulus is related to its psychophysical characteristics. These properties of a stimulus include such variables as intensity, size, and color. With an increasing level of intensity and with greater size, pleasantness tends to increase up to a point and then decrease. As for color, research has found that some colors are more frequently preferred (e.g., blue) than others, although large individual differences exist in most studies.

Organization. The final set of variables to be considered is the organization, patterning, or grouping of stimulus elements. Aesthetic reactions to an object are strongly influenced by factors such as organization, proportion, and symmetry. Gestalt psychologists in particular have theorized that certain shapes or patterns ("good figure") tend to be preferred because of their isomorphism with organizational characteristics of the electrical activity in the brain. Regardless of the ultimate explanation, it is clear that some patterns or

organizations of elements are more pleasing than others. Artists and architects actively employ their intuitive (and sometimes theoretical) knowledge about organization and proportion in their work. An excellent example is the tremendous importance accorded to the "golden section" as a canon for the use of proportion in art and architecture.[4]

## Applying the Theory of Aesthetics to Vandalism

The factors discussed above seem to be directly responsible for the positive hedonic value or enjoyment associated with the destruction of an object. Now we shall explore briefly the relevance of these factors to school vandalism. The applicability of any of these factors to a specific instance of vandalism will depend, of course, upon the specific nature of the object being destroyed, but some illustrations can be offered before presenting concrete cases from our research.

In terms of the stimulus characteristics that are relevant to aesthetic theory, the destruction of an object constitutes a very complicated situation. Three phases or stages in vandalism that are relevant to this theory can be identified: predestruction, during destruction, and

[4]The "golden section" (or "golden number") is the ratio that results when the "...lessor or minor length bears the same relation to the greater or longer length as the major length bears to the sum of the two (Berlyne, 1971, p. 222). That is, for two lengths (A and B): $A/B = B/(A+B)$. (The ratio is 0.618.)

postdestruction. In some cases, information from only one sense modality (e.g., visual) will predominate at one of the three stages. In other cases two or more sources may be involved (e.g., visual, auditory, and tactual/kinesthetic). It is necessary to perform a detailed sequential and cross-sectional analysis in order to explore the applicability of aesthetic theory at each stage.

Let us first consider the importance of the initial appearance of an object. Variation in initial appearance may exist in terms of (1) structural variables such as complexity/simplicity, novelty/familiarity, and expectedness/unexpectedness; (2) psychophysical properties such as size or intensity; and (3) organization or patterning of stimulus elements. These properties of an object are responsible for determining whether it will be judged either interesting or dull, pleasing or displeasing, and beautiful or ugly. If the alteration of the appearance of an object will make it more interesting or pleasing, then such a change may take place even if it means that an individual must resort to socially disapproved behavior such as vandalism. A school official who seemed to be aware of this was quoted in a recent newspaper article about vandalism in the schools as saying,"Young people will protect what is beautiful just as they will deface

what is ugly" (Vandals are Keeping Busy, 1977).

In the second phase--during the process of destruction--our theory has strong and direct relevance. The enjoyment of a destructive act derives primarily from the visual, auditory, and tactual/kinesthetic stimuli that occur during the process of rapid transformation of material (destruction). This is the time during which one experiences most intensely the "fun" of destruction. The process taking place during destruction can be described with the use of the variables comprising aesthetic theory. The presence or absence of these variables (e.g., large, complex, unexpected, etc.) will determine whether the process of destruction is perceived as more or less pleasurable and interesting. Therefore, we can predict the type of vandalism or destruction that will result in the greatest enjoyment. Greater enjoyment should be derived from destroying an object if the process of breakage were to be, for example, more complex (versus simple), more unexpected (versus expected), or more novel (versus familiar). These predictions are equally applicable to stimulus information stemming from visual, auditory, and tactual/kinesthetic modalities. According to this analysis, a person might, therefore, seek out objects in the environment that he or she believes would break in an enjoyable way.

In the third phase--after the destruction has taken place--the appearance of the stimulus object can be

described according to the variables specified in aesthetic theory. The static appearance of the object after destruction could be, for example, very interesting or pleasing. The patterning and organization of the object are very important determinants of its postdestruction appearance. For instance, the breaking of certain panes of glass in a large window might leave a more interesting and pleasing pattern than would have existed if other panes had been broken instead. The anticipation of an object's appearance after breaking may contribute to a person's seeking out such stimuli.

The aesthetic theory can be stated in strong or weak form with relevance to vandalism. In its strong version the theory would state that the appearance of certain objects in the environment, a person's anticipation of the forthcoming affective experience during the destruction, and perhaps also the anticipation of the postdestruction appearance of an object, will serve as <u>eliciting cues</u> that are important causal factors in producing or evoking vandalism. A weaker version of the theory would state that those aesthetic variables associated with an object in each of the three phases serve as <u>discriminative cues</u> which determine the selectivity among potential targets (assuming the inevitability of the destructive act). Furthermo[illegible], even if vandalism were produced by motives

totally extraneous to the domain of our theory (e.g., by imitation, accident, or revenge), positive affective reactions (enjoyment) due to the aesthetic variables would result in reinforcing the destructive act, thus increasing the likelihood of vandalism being repeated at a later time.

In summary, theory and research in aesthetics have discovered several variables that are crucial determinants of the positive affective responses to an object (i.e., complexity, novelty, expectedness, patterning). We argue that the same classes of aesthetic variables are applicable in the case of destruction or vandalism, and that they are responsible for the enjoyment or "fun" associated with destruction. The discussion of the theory to this point has been, of necessity, rather abstract and general. A better sense of the concrete application of the theory to destruction can be gained from the next section, which discusses studies which tested selected aspects of the theory.

## Research Evidence Supporting the Aesthetic Theory of Vandalism

We will review in this section a series of studies which have been undertaken to test the aesthetic theory of vandalism. Data have been collected from laboratory experiments, field studies, and personal interviews. The

research strategy explicitly attempts to use diverse methodologies to investigate the implications of the theory. Each research technique has its own unique advantages as well as its limitations. Laboratory studies permit the most direct and precise test of a theory because of the opportunity for the control of extraneous and potentially confounding variables. Also, laboratory studies tend to have high internal validity. Field research and interview studies are less precise than laboratory studies, but they possess higher external validity. By using diverse methodological approaches to converge on a single research problem, the hypotheses derived from the theory can be tested more satisfactorily and, perhaps, more rigorously than if any single methodology were relied upon.

In designing laboratory experiments, many potentially confounding variables are purposely eliminated or controlled, leaving the situation rather different from "real" behavior settings. One way of mitigating the potential problem of ecological validity in laboratory studies is to collect data under conditions that do not impose artificial constraints on participants. Two studies that meet this criterion have been conducted as part of our research. First, interviews were conducted with a sample of adult males in order to analyze their experiences and reactions

in episodes that involved the destruction of objects. Second, data were collected on acts of vandalism that occurred over the past several years in the public schools of Madison, Wisconsin.

We have submitted aesthetic theory to empirical test by designing several laboratory studies to investigate preferences for destroying objects or structures. The first set of studies reported below varied the subject's knowledge about process and outcome of destruction, and then examined the subsequent choice of objects to be destroyed. A second set of studies investigated the influence of the initial appearance of an object on selection of a specific target to be destroyed from among several alternatives.

Process and Outcome in Destruction

This theory predicts that a person will tend to select objects to destroy that will break in a complex, unexpected, or novel manner. A person's past experiences will, of course, affect the way he believes certain objects will break, and therefore the degree of arousal that will be produced. Since individuals do not share the same past experiences, their anticipations will vary when confronting a stimulus object. In the first studies reported in this section, the effect of past experience was held constant

by exposing subjects to a predetermined series of acts of destruction that varied in complexity.

Experiment 1: Complexity and Behavior. It was hypothesized that the desire to engage in an act of destruction would be positively related to the complexity manifested in the destruction of the object. In this case, that complexity is reflected in both the process of breaking and the outcome (i.e., after the breaking).

Before conducting the study it was necessary to design a scale of values for different levels of complexity involved in the destruction of a series of objects. The destruction consisted of panes of glass being broken. A silent, color motion picture film was prepared that showed 26 panes of glass being broken in a standardized way. All the panes of glass were of equal size (8 1/2" x 10"), but they varied in thickness and type of construction. By varying the velocity of the metal pendulum used to break the panes, each break created a distinctive appearance on the film. Each instance of breaking glass consisted of three segments of equal length: a view of the glass before it broke; a view during the breaking; and a view after the breaking (glass remaining in the frame).[5]

[5]During the scaling and the experiment proper (and in experiments 2 and 3 to follow), the film was slowed down to 1/5 of normal speed in order to enhance the manipulation of complexity.

A subjective scaling method was used to measure the complexity of the breaking. A sample of 20 adult judges observed the film and made judgments on a 15-cm. bipolar scale about the degree of complexity represented by each segment of breaking glass. Subjects were told to think of "complexity" as it is used in everyday language. After scaling the complexity of the series of breaks, 5 episodes were selected from the original 26 on the basis of two criteria. An attempt was made, first, to maximize the the range of scale values of complexity and, second, to minimize the variance of the responses given by the judges.

Returning to the purpose of Experiment 1, recall that our goal is to investigate the relation between subjective complexity and the behavioral commitment to break a particular pane of glass. Our prediction was that the greater the complexity of the break the stronger would be a subject's preference to break that type of glass when given the opportunity.

In Experiment 1, the subjects were 42 college students (21 men and 21 women). Subjects were told that the experiment dealt with the reaction of persons to different types of material. Each subject was told that he or she would see a film showing five pieces of glass being broken, that each of the five panes would break in a somewhat different manner, and that the way each pane broke depended on the type of glass and the nature of its construction. Subjects

saw the film twice, the first time simply to get an idea of the range of breakings, and the second time to decide and indicate which of the five panes of glass shown in the film they would most like to break.

Subjects were led to believe that after they completed the ratings they would have the opportunity to break a pane of glass identical to the one they had rated highest in desire to break. The experimenter stated that the most highly rated type of glass would be placed in the wooden frame seen in the film, and that the subject would be allowed to break it by swinging a metal pendulum which controlled the effort expended. To increase the believability of this statement, a large quantity of broken glass was strewn on the floor of the experimental room. Subjects were assured that other persons had performed the task without mishap, and that they would be positioned a safe distance from the glass to prevent any danger of injury. For reasons of safety, subjects were not actually allowed to break the glass. After completion of the experiment, the subjects were thoroughly debriefed.

The results of Experiment 1 are presented in Figure 1. As predicted, it was found that the rank order of the choice of a pane of glass was related directly to the scale value of the subjective complexity. (There was a slight reversal in ranking for the two most complex stimuli. This

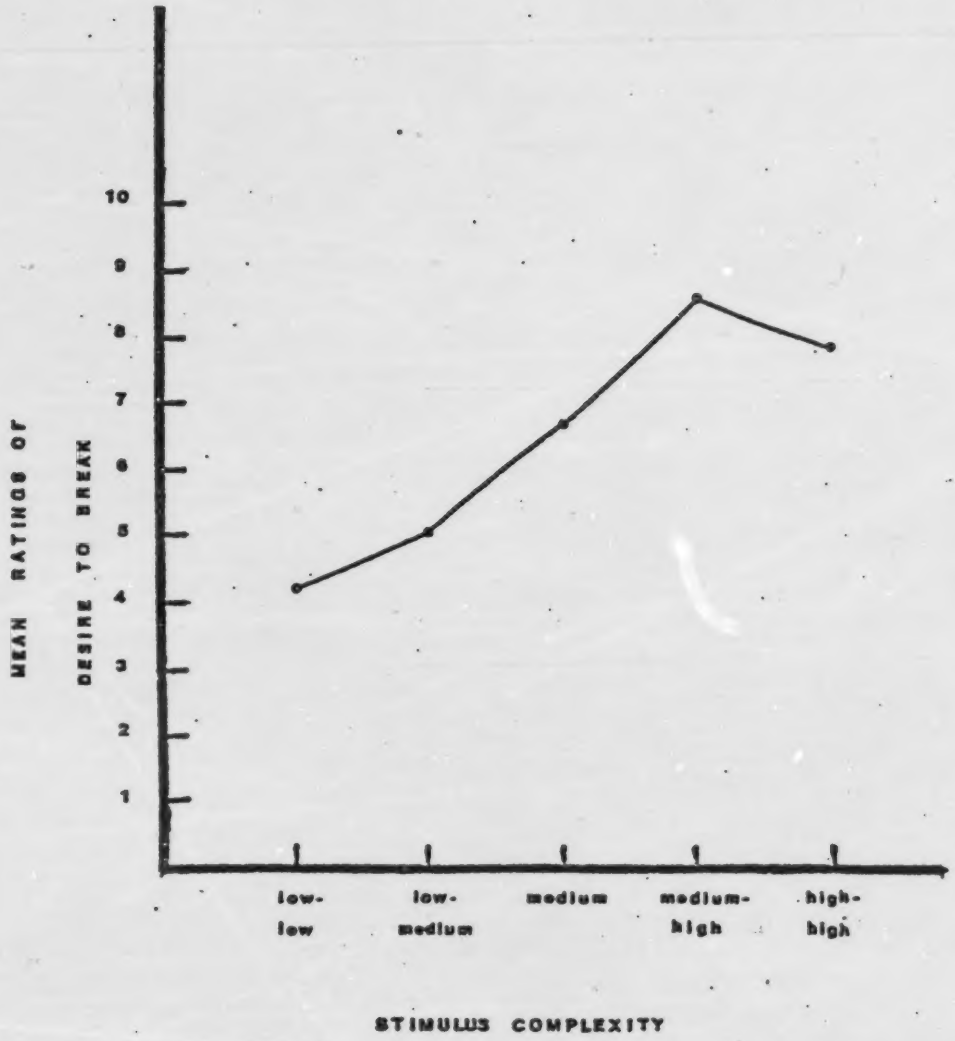


Figure 1. Mean ratings of desire to break as a function of stimulus complexity.

is clarified in a subsequent experiment). No difference existed between men and women in their preferences. A nonparametric statistical test for signed ranks (Hollander & Wolfe, 1973) was performed to determine whether the order obtained for the five segments was in the predicted direction. Results indicated that the ranks were ordered significantly in the direction that was predicted ($p < .001$). These results strongly support our theory. The finding is particularly impressive when one remembers that we measured the subjects' behavioral commitment actually to break a pane of glass. The situation was perceived to be very real and highly involving by the participants; all of them expressed a conviction that they would actually engage in the destruction.

Experiment 2: Pleasingness and Interestingness. Because of the nonlinearity discovered in the relation between subjective ratings of complexity and the desire to break in Experiment 1, we considered it important to investigate more directly the aesthetic responses that are hypothesized as being critical intervening variables. Two important aspects of the hedonic value of a stimulus can be identified--pleasingness and interestingness. Experiment 2 directly investigates the relation between stimulus complexity and judgments of pleasingness and interestingness.

Previous researchers have reported that the complexity-pleasingness and complexity-interestingness relations are often complicated, but usually the resulting curves are similar (Berlyne, 1971). Judgments of both pleasingness and interestingness generally increase as a function of increasing complexity to a point, and then decrease. This tends to produce an inverted U-shaped curve, although the curve for interestingness is not always so simple.

It was hypothesized that, within the moderate range of complexity used in our research, the ratings of both pleasingness and interestingness would increase as the level of stimulus complexity increased. The same film used in Experiment 1 was shown twice to 29 adult subjects. During the first showing the subjects were instructed simply to watch the film in order to familiarize themselves with the range of stimuli. Prior to the second showing, two different sets of instructions were given to subjects: Half of the subjects were required to rate the pleasingness and half were asked to rate the interestingness of each episode of breaking glass.

Results of this study are plotted in Figure 2. The two curves represent the judgments of pleasingness and interestingness as a function of stimulus complexity. It can be seen that, with the exception of one point in each curve, both pleasingness and interestingness tend to

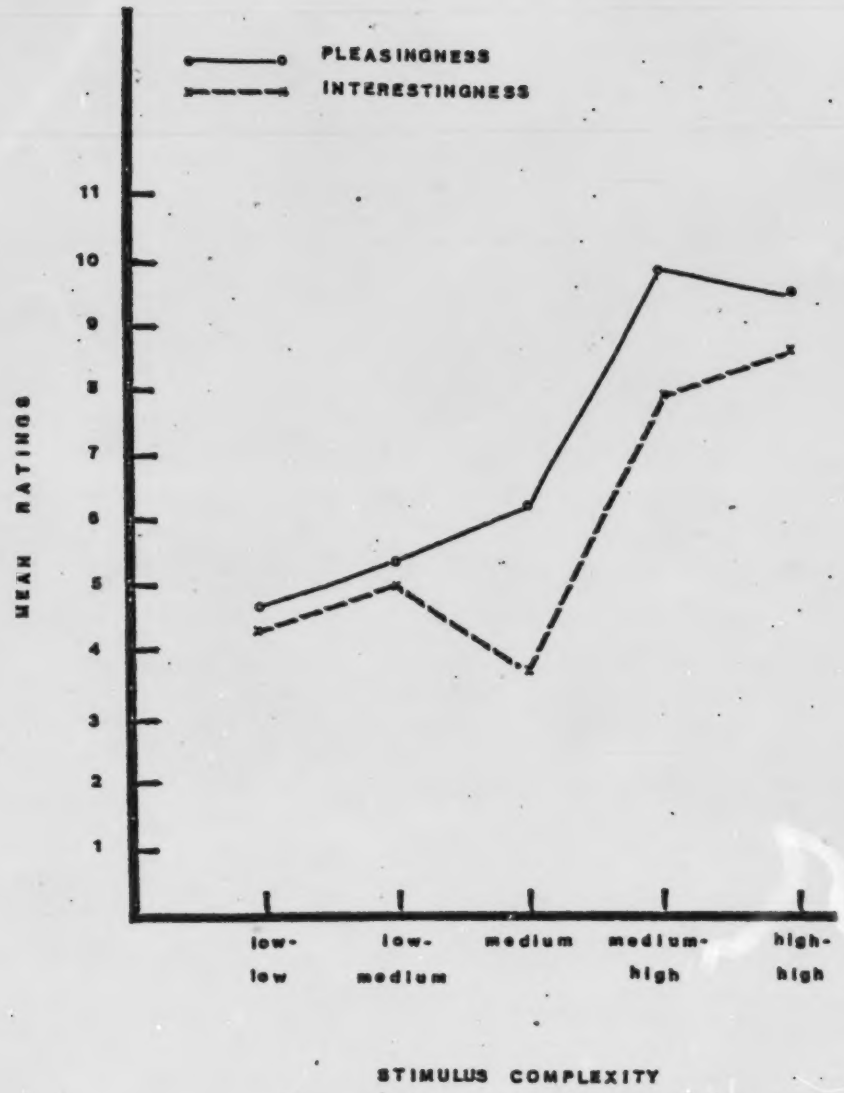


Figure 2. Mean ratings of pleasingness and of interestingness as a function of stimulus complexity.

increase with greater stimulus complexity. A nonparametric test performed on these data (Hollander & Wolfe, 1973) revealed that both pleasingness and interestingness varied significantly as a function of stimulus complexity ($p < .001$ for both).

Figure 2 indicates that the two curves are not completely linear, nor are they identical in shape. By comparing these results with those from Experiment 1, we can see that the shape of the curve depicting the relation between commitment to break and stimulus complexity (Fig. 1) is very similar to the shape of the curve found for pleasingness as a function of complexity in the present study (Fig. 2). In fact, pleasingness and desire to break produced identical rank orders of judgment as a function of stimulus complexity. These ranking data suggest that a direct relation exists between a person's desire to break an object and the extent to which he or she considers the actual breaking to be pleasing--in other words, one prefers breaking those panes of glass which break in the most pleasurable way.

Prior to the present studies, research that attempted to test Berlyne's (1971) theory of aesthetics utilized art, music, or other material commonly thought to produce aesthetic experiences. By contrast, the present experiment showed that a similar relation between complexity and

hedonic value (pleasingness and interestingness) exists for stimuli not at all considered to constitute aesthetic experience, i.e., the destruction of an object. Hence, the results of this study provide evidence of a direct link between aesthetic theory and the act of destruction.

Experiment 3: Process versus Outcome. In a third experiment we assessed the relative contribution of the two phases involved in the destruction of an object--the process of breaking and the final appearance after the breaking--to the judgments of complexity. The experiment had two basic purposes. The first was to assess the contribution to the perception of overall stimulus complexity that was made by the process of breaking and by the end result of the breaking. Second, the degree of complexity of the stimulus in the two phases (during and after breaking) was related to the two measures of hedonic value obtained in Experiment 2 (pleasingness and interestingness).

Since the subjective scaling of complexity obtained earlier was based on ratings of the entire stimulus segment, both the process of the breaking and appearance afterwards were probably taken into account in making judgments. In the present study, the total complexity of the stimulus was divided into the two component parts being studied by appropriate experimental manipulations.

Twenty adult subjects were asked to make a judgment

about the complexity of the five instances of breaking panes of glass used in earlier experiments. Three films were presented on three different days, with a two-day period between each showing. On the first day subjects were shown the entire segment of each stimulus (the breaking and its end result); on the second day they were shown only the process phase of each breaking; and on the last day they were shown only the end result of each breaking (the pattern left in the frame after the breaking was completed). After each viewing the subjects rated the complexity of each of the five instances of breaking. The data from the two components of the breaking were compared to results obtained for total complexity and to results for pleasingness and interestingness obtained in earlier studies.

Results of the ratings for the three measures of stimulus complexity are summarized in Table 1. As can be seen from the data in the middle section of the table, the mean ratings for complexity of the process phase alone were almost identical to the ratings obtained for complexity of the total sequence. The predicted order was obtained for the three stimuli lowest in total complexity, but the stimulus that was highest in total complexity (high-high) was rated second highest in process complexity. As can be seen in the last two columns of Table 1, the ratings for the end result of the breaking differed from

Table 1

Mean Ratings and Ranks of the Complexity of the Total, the Process, and the End Results

| | Total | | Process | | End Result | |
|---|---|---|---|---|---|---|
| Verbal Description | Mean Rating | Rank | Mean Rating | Rank | Mean Rating | Rank |
| Low-low | 3.69 | 1 | 3.32 | 1 | 4.81 | 2 |
| Low-medium | 4.66 | 2 | 5.36 | 2 | 5.45 | 3 |
| Medium | 7.87 | 3 | 8.80 | 3 | 2.77 | 1 |
| Medium-high | 10.74 | 4 | 11.11 | 5 | 9.25 | 4 |
| High-high | 12.64 | 5 | 10.66 | 4 | 12.82 | 5 |

Note: $N = 20$

the findings for the total and process results.

Shown in Figures 3 and 4 are the curves for the relation between judgment of the overall stimulus complexity and (a) the two components of complexity (process and end result) and (b) ratings of hedonic value obtained in Experiment 2 (pleasingness and interestingness). The rank order for process complexity was identical to the rank order obtained earlier for pleasingness (Experiment 2) and also for desire to break (Experiment 1). The rank order for complexity of end result was identical to the curve found for ratings of interestingness in Experiment 2.

The relation between end result and interestingness explains the reversal in the predicted order of the two most complex stimuli that was noted in Experiment 1. In making their overall ratings of total complexity of stimulus breaking in Experiment 1, the subjects appear to have given more weight in their judgments to the process phase of the breaking than to the final result phase.

In sum, when making ratings of pleasingness and desire to break, subjects seemed to focus their attention primarily on the process of the breaking instead of on its outcome, as shown in Figure 3. In making ratings about interestingness, however, subjects seemed more closely attuned to the end result, as we see in Figure 4.

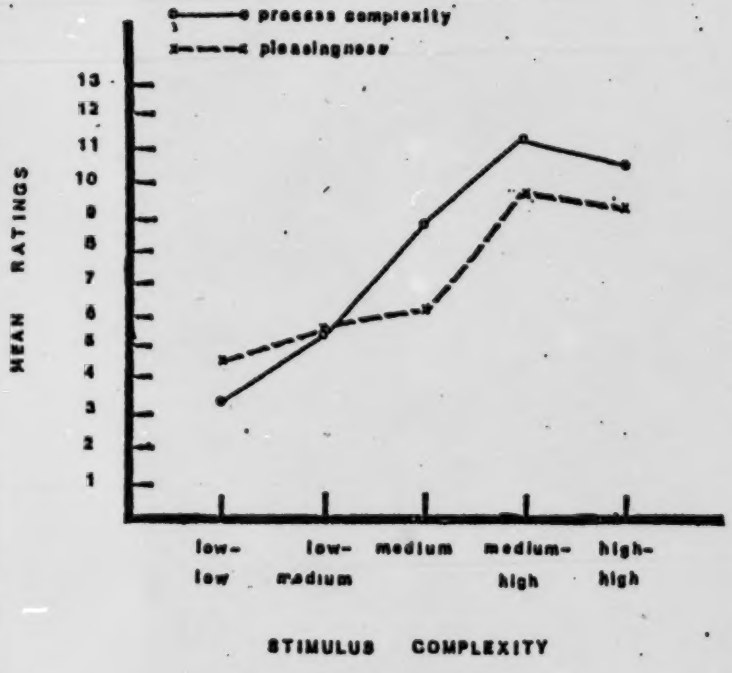


Figure 3. Mean ratings of pleasingness and of process complexity as a function of stimulus complexity.

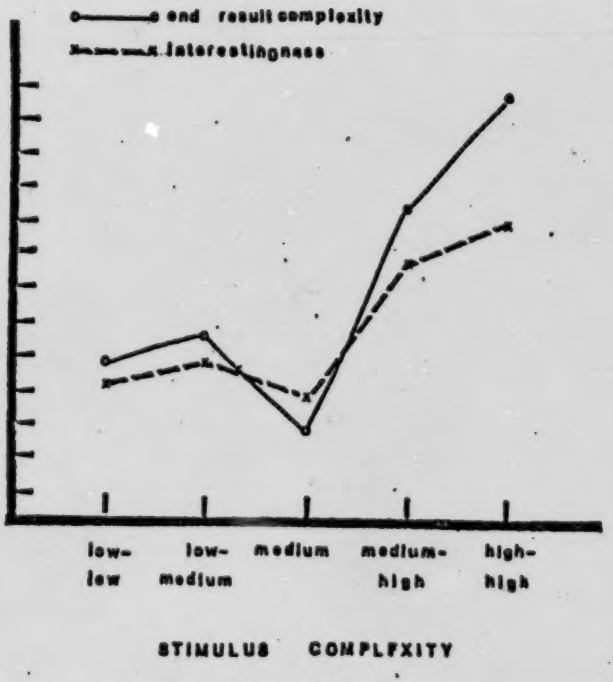


Figure 4. Mean ratings of interestingness and of end result complexity as a function of stimulus complexity.

Results of this study indicate that the process of the breaking may be the most important influence on a person's decision to destroy an object. Similarly, the process of breaking appears to be closely related to pleasingness. We can conclude, therefore, that there is a strong and direct relation between the desire to destroy an object and the level of complexity during the process of breaking.[6]

Experiment 4: Expectation and Uncertainty. The fourth experiment in this series investigates a different variable--expectation or uncertainty. According to our earlier discussion of aesthetic theory, an act of destruction should be most enjoyable when it produces the greatest surprise, i.e., when it violates a strongly established expectation. To test this prediction an experimental condition was created in which one of the episodes of breaking glass did not occur in the way that the subject had been led to expect. Thus, we created a disconfirmation of the subject's expectation, i.e., surprise.

[6]It might be argued that because of the slower speed of the film in experiments 1, 2, and 3, the generalization of these results is limited. To test this possibility, additional data were collected from 30 subjects. Five stimuli were rated for pleasingness and interestingness under both normal and slow speeds of the film. Results were very similar, in that a strong linear relation was found between complexity and the affective measures under both speeds of the film.

Two films were prepared, each consisting of four segments showing panes of glass breaking. These four were selected from among 26 segments in order to hold constant the complexity of the breakings. All four segments were approximately equal in complexity, averaging 11.10 on a scale that ranged from 0 to 15. In the first three segments of both films the glass broke when the metal weight hit the glass the first time. The films were identical for the first three segments.

In one version of the film (control condition), the glass in the fourth segment was shown breaking when hit by the metal, just as in the first three segments. In the other film (experimental condition), the glass in the fourth segment did not break when hit the first time. It was then struck a second time without breaking. It finally broke on the third try. The expectation had been established in both films that the glass would break the first time it was struck by the metal weight. However, in the experimental condition this expectation was violated in the fourth segment of the film--the glass did not break until the third attempt. A piece of bulletproof glass was used in the experimental film to prevent breaking. The portion of the film showing two unsuccessful blows by the metal weight was added to the fourth segment of the film just prior to the successful breaking. The breaking glass shown in the

fourth segment was exactly the same in the experimental and control conditions.

A total of 37 adult subjects participated in the experiment (18 in the experimental and 19 in the control condition). After each segment of film the subjects indicated their degree of enjoyment of the breaking on a 20-cm. scale. Results showed that the mean score for enjoyment on the fourth segment was 11.27 in the experimental and 6.77 in the control condition, the higher score indicating greater enjoyment. The difference between the experimental and control conditions was statistically significant ($t = 2.50$, $p < .01$). The experimental and control conditions did not differ, however, in ratings of enjoyment given for the other three segments of the film.

In this study an expectation was established by presenting three filmed segments, each showing a pane of glass breaking on the first attempt. When the expectation was violated--the glass did not break until the third try--the experience was reported by subjects as being more enjoyable than when their expectation was confirmed. In addition to the surprise produced by the failure of the glass to break as expected, it would seem that uncertainty may also have contributed to the enjoyment. When the glass did not break on the first or second attempt, the subject no doubt began to feel very uncertain about when it would

break, and uncertainty tends to produce positive affect. The initial surprise plus the consequent uncertainty must have been jointly responsible for the report of enhanced enjoyment. We are unable to assign relative weights to these two factors at this time.

Characteristics of Objects: Structure and Organization

Two somewhat different sets of studies are summarized in this section. Three experiments were designed to investigate the role of static factors that exist prior to destruction. The first investigated level of initial complexity of a structure; the second assessed influence of initial patterning among elements composing an object; and the third studied different types of material. Two naturalistic studies are also reported in this section: an interview with a sample of young men which explored variables relevant to aesthetic theory; and preliminary data from a longitudinal study in vandalism in the schools.

Experiment 1: Initial Complexity of a Structure. In order to investigate the role of initial complexity as a discriminative cue for destruction, a series of model buildings were constructed. Each building was a tower built with wooden blocks (11" x 11" base), but with important differences in design. Initial complexity of the buildings was operationally defined in three ways:

(1) tall versus short buildings, with the size of blocks and shape of the buildings held constant; (2) large versus small blocks used in the construction, with height and shape of buildings held constant: (3) irregular versus regular design, with height, size of blocks, and shape of buildings held constant. Three pairs of model buildings were constructed to these specifications; one of each pair was complex and the other simple, as defined above.

We predicted that, if given the opportunity, a person would prefer to destroy the model building having a complex as opposed to the one having simple initial structure.[7] Twenty-four adult subjects were tested individually. The subject was brought into a room containing the three sets of two buildings. For each of the three pairs the subject was asked to choose which one of the two buildings he or she would like "to knock down--to demolish by kicking it down with your foot." A separate choice was made for each of the three pairs. Order of presentation was counterbalanced across subjects.

Subjects were thus given the opportunity to destroy one of the two buildings. Each pair was comprised of a complex and a simple structure, operationally defined in terms of: height of the building (44" versus 26"), size of blocks (2" versus 4" cubes), and design (irregular

[7]This experiment was conducted in collaboration with Daniel R. Spencer.

pattern of spaces and solids versus a regular pattern). Subjects were not actually allowed to destroy the buildings at the end of the session, however, as they had been led to believe.

Results of the subjects' choice between the simple and complex buildings were analyzed separately for the three types of pairs by using binomial tests. The percentage of subjects who expressed a preference for destroying the complex instead of the simple building are presented in Table 2. Averaging across the three types of complexity, 82 percent of the subjects chose the complex structure. Males and females did not differ in their preferences. As can be seen in Table 2, subjects preferred to destroy the tall rather than the short building ($p < .01$), the building constructed of small rather than large blocks ($p < .001$), and the building of irregular rather than regular design ($p < .01$).

Subjects were also asked which alternative in each of the three pairs of buildings would be more "fun, enjoyable, and interesting" to knock down. The same question was asked about the subject's perception of other persons' preferences. The intercorrelations among these four measures (choice and enjoyment for self; perceived choice and enjoyment of others) were high, with correlation coefficients ranging from .79 to .95.

Table 2

Preference for Destruction as a Function of Initial Complexity of a Structure

| Dimension of Initial Structure | Percent Choosing Complex |
|---|---|
| Height (Tall versus Short) | 79 |
| Elements (Small versus Large Blocks) | 82 |
| Design (Irregular versus Regular) | 75 |

Note: The more complex alternative in each pair is indicated by underlining.

N = 24

Results of this study indicate clearly that persons prefer to destroy objects that are objectively more complex in terms of initial structure, construction, or design. It can be concluded, therefore, that complexity of the initial appearance of an object can serve as a discriminative cue for destruction. Moreover, it would appear that the mechanism by which initial structure is connected to destruction is the anticipation of the greater enjoyment that a more complex structure will produce when it is destroyed.

Experiment 2: Initial Pattern of Elements. It was hypothesized that an individual will selectively choose to destroy those particular elements or aspects of an object that will produce the most pleasing pattern or organization of elements after destruction. Hence, knowledge of the aesthetic value (pleasingness) of a variety of patterns would enable us to predict the direction of a specific act of destruction, namely that it should result in an optimally pleasing pattern. More specifically, it is hypothesized that one's choice in breaking a specific portion of a window containing several panes will be determined by the pleasingness of the resulting pattern of intact and missing (broken) parts.

In order to make these predictions, it was necessary first to assess the aesthetic value of a large number of potential patterns. This was accomplished by obtaining

ratings of pleasingness for 72 different patterns consisting of nine adjacent white and black squares in a three-by-three arrangement. Judges observed all these patterns on slides and rated them for pleasingness. Scale values were derived for the 72 patterns by using a technique discussed by Torgerson (1958). As expected, the symmetrical patterns generally were perceived as more pleasing than the asymmetrical ones. Knowing the aesthetic values for a variety of patterns, we can predict selectivity in destruction when a single act makes it possible to create a variety of patterns.

For illustrative purposes, we shall describe results from one of our experiments dealing with patterning. A window was constructed that had the same structure as the abstract patterns used in the scaling (nine 8" x 10" panes of glass; three rows and three columns of three panes). According to the scaling data, three black squares across the diagonal is a highly pleasing pattern. Therefore, the two panes at the end of the diagonal were removed from the window so that completion of the diagonal (three panes missing) should create a pattern that is more pleasing than other potential patterns. To facilitate viewing by subjects, the intact panes in the window were tinted white. The initial pattern presented by the window is shown in Figure 5, top left.

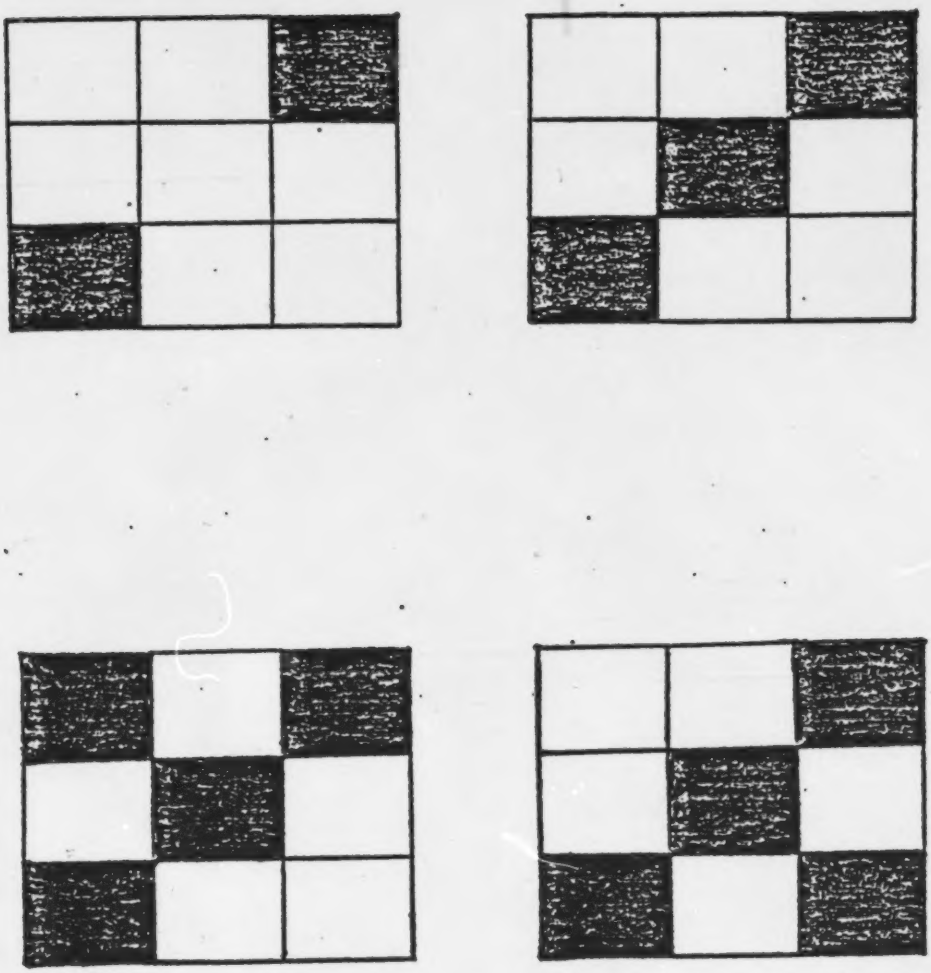

Figure 5. The initial schematic appearance of the stimulus in the patterning study (top left), the predicted appearance after the first choice for destruction (top right), and predicted appearance after second choice for destruction (bottom left and right).

The experiment was presented as a study of reactions to the breaking of glass. Each adult subject was asked to select any one of the panes of glass from the window to be broken. It was made clear that the experimenter would do the actual breaking. We predicted that subjects would choose to have the pane of glass in the middle broken, since this would create a diagonal pattern (Figure 5, top right) which has a high pleasingness score.

Subjects were allowed to choose any pane from among the seven unbroken ones, so the probability of choosing the predicted (middle) pane by chance is 1/7 (.14) Results showed that the obtained frequency for choice of the middle pane was 63 percent (17 of the 27 subjects), which is significantly higher than the expected frequency, $\chi^2$ (6) = 48.30, $p < .001$.

After making the initial choice, each subject was asked which one of the remaining six panes he or she would most like to have broken. Based on the scaling data, it was predicted that the most popular choice for the next breaking would be either one of the two corner panes (Fig. 5, bottom left and right), because this would produce a pattern with a pleasingness score higher than any other. Results showed that of the 17 subjects who initially chose the middle pane, 11 of them (65 percent) chose one of the two corner panes next. Expected or chance score is 2/6 or .33. Thus,

on their second choice, subjects also chose to break a pane that resulted in the most pleasing pattern that could be created.

In an effort to assess informally the relevance of these data to "real-life" incidents, the experimenter asked the subjects to imagine that they were passing an abandoned warehouse, and had a rock that they intended to throw at a window. In responding to this hypothetical question, almost all subjects said that they would aim the rock at a specific pane of glass; and, given a similar pattern, most said they would probably aim at the same position they selected in the present study.

Experiment 3: Type of Material. In a preliminary study some very interesting results were found in support of the hypothesis that the nature of the materials comprising an object could lead to expectations about how it would break, which in turn could influence one's desire to break it. Twenty-five subjects were shown a film containing 19 segments of glass breaking. Three main types of glass were represented: (1) 13 regular window panes; (2) 4 wire-safety panes (containing wire mesh); and (3) 2 laminated panes (two pieces of regular glass joined together with a piece of vinyl between them). After seeing each segment being broken, subjects indicated on a 10-point scale how much they would like to break such

a piece of glass. (From data collected previously, scale values for subjective complexity were also available for all stimuli.)

Results were very interesting, although there were too few wire-safety glass and laminated glass segments to justify statistical tests. For two of the three types of material, the regular window panes and the wire-safety glass, the rank order for desire to break was almost identical to the rank order for complexity. But in the case of the laminated glass, the rank order for desire to break was substantially higher than its rank order for complexity. Since the laminated glass broke in essentially the same manner as the wire-safety glass, danger to self could not have been a critical factor in the ratings. The wire, because of its visibility to the subjects, may have provided an expectation about how the wire-safety glass would break (i.e., that it would not shatter). The appearance of the laminated glass probably caused subjects to expect that it would break in the same way as the regular glass, but it did not. Thus, the subjects expressed a preference for breaking the type of glass that broke in an unexpected way (i.e., the laminated glass).

Interview: Aesthetic Variables and Destruction. To provide an additional test of the aesthetic theory of vandalism under more natural conditions, personal interviews are being conducted with a sample of young men (18 to 20 years of age). The interviewing has not yet been completed,

and the open-ended data have not been coded and analyzed. Nevertheless, certain useful, though tentative, observations may be made from the information now available.

Each respondent was interviewed individually, and the session tape-recorded. He was asked to relate in detail those incidents in which he had broken or destroyed something, and to describe the circumstances under which he had done it. The sample of respondents was selected randomly from among first- and second-year college men; the extent to which a respondent had engaged in acts of vandalism was not known prior to the interview. If hypotheses from aesthetic theory are confirmed with data from this "normal" sample of respondents, it would provide strong support for the generality of our theory.[8]

In the beginning of each session, after establishing rapport with the respondent, the male interviewer introduced the type of question that would be explored more extensively later. The respondent was first asked to recall deliberately breaking something that belonged to him. It was thought that a brief discussion of this comparatively innocuous topic would make him feel more comfortable answering questions about vandalism later. Only incidents that had happened within the past five years were explored.

[8]We would like to express our appreciation to the Institute for Research on Poverty, University of Wisconsin, for providing support for this study. We also want to thank David Bauman for serving as the interviewer.

The respondent was next asked to recall incidents in which he had deliberately broken or destroyed something that did not belong to him. He was told to mention briefly all the items he could remember having broken during the previous five-year period. The interviewer then asked very detailed and probing questions about the three incidents that involved the most extensive amount of damage.

The purpose of these interviews is to test aesthetic theory by data obtained from respondents' unstructured discussions of destructive incidents. It is important to observe the nature of the spontaneous responses about the perceived characteristics of objects during all phases of the destructive process. A central goal of the study is to relate the degree of enjoyment associated with destruction to the stimulus properties of the object destroyed (e.g., complexity, novelty, unexpectedness). We also examined the reasons for selecting the item that was destroyed, e.g., whether the target was selected at random or because of a specific reason.

The interview was deliberately open-ended and relatively unstructured, with the restriction that the interviewer ensure that the following questions concerning specific issues were asked of every respondent:

(1) What was the motivation for destroying the objects (e.g., fun, anger, boredom, or revenge)?

(2) How did the respondent feel before, during, and immediately after the breaking?

(3) Did the respondent remember how the object looked before, during, and after the breaking?

(4) How significant was the change in appearance of the object from pre- to postdestruction?

(5) Was the respondent alone or with others while breaking the object?

(6) Did the respondent ever return later to examine the object he had broken?

(7) Why was a particular object selected to be broken?

As stated earlier, the analysis of the unstructured responses has not yet been completed. Nevertheless, inspection of the data available enables us to offer some interesting comments and illustrations relevant to our theory. One of the most interesting facts is the amazing detail with which respondents were able to recall and describe their acts of destruction. Almost never was anyone unable to remember even minute aspects of an incident. They described clearly and in great detail both the appearance of an object and the nature of their feelings before, during, and after the breaking, as well as more general features of the surrounding environment. Such clarity suggests that the respondents paid a great deal of attention

to the object of destruction. This seems almost always to have been a salient and critical part of the destructive act. Moreover, respondents could readily state why they had chosen one object over another in close proximity to it; far from being random and unimportant, there were specific reasons for having selected a particular object to break instead of another.

The respondents' own words illustrate some of the reasons for destruction. One respondent stated that he had purposely tried to create very complicated breakage by continuing to smash an electronics part into "smaller pieces, smaller pieces, smaller pieces." The satisfaction and joy he derived from this act was evident by his laughter as he recalled it. Destruction for the sake of enjoyment is illustrated by many other comments. One respondent said that the children in his community were once allowed to destroy, ad libitum, anything in their old high school just before it was scheduled to be demolished. Under the protective eyes of the police, "thousands of kids had a lot of fun."

Many respondents said that they had selected specific objects because they anticipated that those objects would break in a certain way. For example, one person broke a particular light because the glass was very thick, and he expected that it would break in an interesting way. He

also believed that breaking the light would produce a novel result, since it was "a weird surface to hit." Although he had later regretted having engaged in the vandalism, this respondent recalled that immediately after breaking the light he "ran off with a feeling of exhilaration."

A number of respondents implied a somewhat different motive behind some destructive acts. One person felt that he had "accomplished something by the breaking." Similarly, a person who had smashed a locker in his high school recalled passing it for the next three years and each time thinking proudly, "there's my little destruction to this brand new school."

At the completion of the open-ended questions about each incident of destruction, the respondent was asked to give quantitative responses about the incident on seven different scales. Each act of destruction was rated in terms of the following 15-cm. bipolar scales: (1) "very much unenjoyable"--"very much enjoyable"; (2) "very simple"--"very complex"; (3) "as expected"--"surprising"; (4) "very unexcited"--"very excited"; (5) "very uninteresting"--"very interesting"; (6) "very little effort"--"very much effort"; and (7) "ugly"--"beautiful." The scales were presented in random order for each person and for each incident of breaking. The data obtained from these seven scales have the advantage of being quantifiable and easily analyzed.

From the responses of 30 subjects, intercorrelations were computed among the seven scales for the single incident of destruction that involved the most extensive damage for each respondent.

The correlation matrix for the seven scales is presented in Table 3. The table shows that high positive correlations were found between several of the scales. It is important to note that the correlations were not uniformly strong among all the scales, which indicates that subjects were indeed discriminating in their responses. These correlations provide new insights and support findings obtained from the laboratory studies reported earlier.

Of primary importance is the enjoyment scale, which we will conceptualize as the basic dependent variable. A strong positive correlation was found between degree of enjoyment that persons experienced during destruction and the complexity of the object while it was breaking ($\underline{r} = .51$, $\underline{p} < .01$). This result supports the experimental finding reported earlier for stimulus complexity and enjoyment. Enjoyment of the destruction also related significantly to the amount of effort exerted in the breaking ($\underline{r} = .60$, $\underline{p} < .01$). It can be suggested that exertion or effort increases arousal; and, according to Berlyne's (1971) theory, arousal is related to enjoyableness. The same relation seems to hold for acts of destruction.

Table 3

Correlations Among Scales
Assessing Stimulus Characteristics of Objects
and Affective Reactions to Their Destruction

| | Enjoyable (1) | Complex (2) | Surprising (3) | Excited (4) | Effort (5) | Beautiful (6) | Interesting (7) |
|---|---|---|---|---|---|---|---|
| (1) | -- | | | | | | |
| (2) | .51** | -- | | | | | |
| (3) | .13 | -.08 | -- | | | | |
| (4) | .33 | .23 | -.04 | -- | | | |
| (5) | .60** | .79** | -.08 | .21 | -- | | |
| (6) | .42* | -.25 | -.06 | .10 | .04 | -- | |
| (7) | .64** | .45* | .16 | .64** | .49** | .13 | -- |

* < .05

** < .01

N = 30

Of interest, too, is the very high correlation between effort and complexity of the breaking ($r$ = .79, $p$ < .01). A significant correlation was obtained between enjoyment and ratings of the beauty of the destruction ($r$ = .42, $p$ < .05). Thus, these respondents did associate the aesthetic quality of an act of destruction with their enjoyment of it. Finally, as predicted (and consistent with earlier experimental findings), interestingness was highly correlated with enjoyment ($r$ = .64, $p$ < .01). Many, although not all, of the same variables that were significantly correlated with enjoyment were also highly correlated with interestingness.

Archival Data on School Vandalism. We have recently begun a study that utilizes existing data on vandalism in the schools. All the acts of vandalism reported in the Madison, Wisconsin, public schools during the past five years are being analyzed.[9] With these data it may be possible to determine if certain objects are selected to be vandalized because of their stimulus characteristics, as our theory would predict. For example, are certain sizes or types of windows broken more often than others?

[9]We are grateful to Mr. Kenneth Jensen and Mr. Fred Greco, of the Madison Public School District, for their cooperation in making these data available to us and for their helpful suggestions.

At present, we are involved in a detailed coding of each act of vandalism. Codes have been developed to indicate type of damage, size of objec[t], visibility of object, nearness to street and lighting, nearness to projectiles, type of room, time of year, weather, etc. Once each item has been completely coded, the data will be analyzed by computer for general consistencies and association among variables. It would be premature to comment about the data at this time. It is clear even now, however, that certain types of objects (e.g., windows) are vandalized more often than others. Also, particular items are vandalized repeatedly in particular schools over an extended period of time. For example, seat cushions have been damaged again and again for a period of many years in one high school.

## Future Research

Our research has touched only lightly on selected aspects of the aesthetic theory of vandalism. Much remains to be done if the theory is to be a viable alternative to other approaches. Since the research conducted to this point is still in its beginning stages, it may be useful to suggest the direction of our future research.

First, research is needed on the role of all the sense modalities and their interaction. The empirical

studies reported in this chapter have focused entirely upon only one sense modality--vision. In many cases of vandalism, auditory cues (sounds) may be much more important than visual cues, according to anecdotal accounts. (Certainly this is likely to be true at night!) Tactual/kinesthetic information is particularly relevant when destruction involves direct contact with the object (e.g., kicking or striking), rather than contact from a distance (e.g., throwing a rock). Expectations concerning the "feel" (feedback and resistance) accompanying the act may influence a person's affective reactions. Research is needed to assess the relative importance of auditory, visual, and tactual/kinesthetic cues in different types of vandalism.

Second, there are many important questions about motivation and arousal. Research is needed to investigate the contribution of frustration, anger, boredom, and other sources of arousal to the positive aesthetic experience resulting from an act of destruction. How does anger or frustration affect the relation between aesthetic variables and the resulting experience of enjoyment? The two-factor theory of aesthetics advanced by Berlyne (1971) offers some hints, but only further research can answer this question fully and accurately.

Third, research should be conducted on the relation between aesthetic theory and the self. Can destruction be

considered an aesthetic or creative response in the sense that it is one way of altering (and thereby controlling) a portion of the person's environment? If so, is destruction simply another form of self-expression? Some observers of the phenomenon of graffiti have suggested such an interpretation (Kurlansky, Naar, & Mailer, 1974). What is the relation between characteristics of self (e.g., control, esteem, and aesthetic needs) and the hedonic value of vandalism? Why are "beautiful" objects less likely to be vandalized--if such is indeed the case?

Finally, aesthetic theory can be applied to a much wider range of acts of vandalism than those alluded to in this paper. As mentioned above, we may gain new understanding of graffiti by interpreting it in terms of aesthetic theory. Also, it is interesting to note that fire has all the stimulus characteristics that ensure a very high hedonic value, and vandalism by fire is a fairly frequent event in the schools. Research on fire from the point of view of aesthetic theory might shed a great deal of light on this form of vandalism.

## Implications

According to aesthetic theory, school vandalism could be greatly reduced simply by making it a less enjoyable experience for participants. This could be accomplished by changing

some aspects of the environment or certain characteristics of the person so that the destruction is a less positive aesthetic experience. The recommendations and suggestions that follow fall into two areas: changes directed toward the physical environment and changes directed toward the individual.

Design and the Physical Environment

Aspects of the physical environment should be modified so that defacement, breakage, and other forms of destruction will be less pleasant for the individual. According to this theory, destruction is more pleasurable when it is complex, unexpected, novel, or intense in terms of visual, auditory, and tactual/kinesthetic information. Vandalism can be made less enjoyable by selecting structures, designs, and types of material that minimize this type of enjoyment.

Let us examine first the design of the school as a whole and its relation to the surrounding neighborhood. It is consistent with our theory to hypothesize that a person's desire to change an object will be influenced by the aesthetic quality of the environment of which it is a part. A comment by one of our interview subjects illustrates this point. The subject stated that he broke something because it was "ugly" and "really didn't blend in...with anything else around." If a structure is

perceived as being too simple in relation to a very complex environment, a person may try to make the simple structure more complex. Thus, a simple block-shaped school standing in the middle of a ghetto area (often separated from other buildings) may literally be asking to be vandalized--to be made a part of the total neighborhood. Recently, architects have tended to design even simpler structures (partly in order to make them "vandalproof"), which may only increase disharmony with the surrounding environment. We would suggest that school buildings be designed to mirror the aesthetic characteristics of the surrounding neighborhood. If the neighborhood is very complex, the building should be very complex (numerous wings, panels, etc.); if the school is located in a simpler environment, such as a rural community, the design of the school should be simple.

We suggest specific changes that can be made to the physical plant of the school. According to this theory, the three phases that must be considered in vandalism are the initial appearance of the object, the way the object breaks, and the appearance of the object after the breaking. The school should be designed so as to (1) ensure that objects commonly vandalized break in a way that is not enjoyable; and (2) eliminate properties of the environment that might elicit acts of vandalism because of their initial and postdestruction appearance.

Architects and designers have given some thought to the susceptibility to vandalism of various types of material (Leather & Matthews, 1973; Miller, 1973). However, in general, the primary concern has been with "vandalproofing"--trying to find highly durable and destruction-resistant materials. Of course, it is impossible to make a building or site completely vandalproof. And well-intentioned efforts may even backfire, since youngsters are likely to perceive such attempts as a challenge to their competence as demolitions experts. From our point of view, durability and resistance to destruction are less important than that objects yield a minimum of enjoyment while being destroyed.

Various materials differ widely in the appearance and sounds they produce during destruction. Architects have noted that glass, composite materials, asbestos, and tile hangings are highly susceptible to attack (Leather & Matthews, 1973). One way to reduce the enjoyment and interestingness of breaking windows is to use plastic or wire-safety glass. By using subjective scaling techniques, it would be easy to assess the affective value produced by the destruction of a wide variety of types of materials. Based on such scaling results, types of materials which are less enjoyable to break could be selected for use in locations that are highly susceptible to vandalism.

Still other techniques can be suggested for decreasing the pleasure derived from vandalism. First, any damage produced by vandalism should be repaired immediately. As indicated by the comments of our subjects, as well as from other accounts, vandals often return later to see and admire their handiwork. If their work is not visible when they return, they might be less likely to engage in vandalism in the future. Second, windows and other objects should be small. A small window generally breaks in a much simpler and less interesting way than a large window. Also, the noise accompanying the breaking of a small-sized unit tends to be less loud.

According to our theory, the appearance of an object prior to and after its destruction is important in vandalism. If an object looks as if it would break in an interesting and pleasurable way, the destruction is more likely to occur. Similarly, any object that can be made more aesthetically pleasing (i.e., interesting, novel, symmetrical, patterned) through destruction is a candidate for such destruction. For example, a window with a large center pane surrounded by smaller panes often looks more balanced after breaking the center pane than it did before. No aspect of the environment should make a person feel that by destroying it he or she will have made it or the environment more beautiful or interesting.

Still another recommendation from aesthetic theory is to give students the opportunity to increase the pleasingness and interestingness of the school environment by their own efforts in socially approved ways. Ideally, all aspects of the physical environment of a school would be highly malleable, flexible, and adaptable. We can encourage students to modify the design, shape, surface, form, or color of objects and areas in the school where possible. The school would certainly take on a more interesting, and a constantly changing, appearance. Having altered objects and areas to make them more aesthetically pleasing, the students might refrain from resorting to other more dramatic methods of alteration, such as vandalism. Some school officials seem intuitively to have recognized this, and have installed "scribbling walls" and "graffiti boards" in their schools.

As a final point in this section, aesthetic theory has implications for external lighting. Enjoyment of vandalism would be greatly diminished if the individual were unable fully to perceive (i.e., see, hear, feel) the process of destruction as it takes place and as it looks afterwards. Therefore, preventing a vandal from being able to observe the destruction should decrease the likelihood of its occurrence. This leads to the rather unorthodox recommendation that the school itself not be illuminated, but that the ground farther away be well lighted. Lights should not

be directed toward windows, since being able to see clearly the destruction taking place would only enhance the pleasure experienced by the vandal.

The Individual

Practical implications from the aesthetic theory of vandalism are conceptually identical whether directed toward the physical environment or toward the psychological processes of the individual. The theory maintains that vandalism is in effect an aesthetic experience; therefore, a recommendation which considers the individual should be directed toward the effect of making destruction a less enjoyable experience.

There are two methods for attempting to bring about changes at the level of the individual--psychotherapy and education. We can dismiss psychotherapy without further consideration, both because of its ineffectiveness in this domain of behavior and because there is little evidence indicating that psychopathology is an important determinant of vandalism. Education--in the broadest sense of the term--is the only feasible and reasonable method available for trying to change the psychological characteristics of an individual. It is only fitting that attempts be made to combat school vandalism using that force which is the school's raison d'etre--education itself. Underlying

the public's support of education in a democratic society if the tacit faith that increased understanding by the citizenry results directly in more socially responsible behavior.

Our theory stresses that students should be made aware of the basic psychological processes contributing to their enjoyment of destruction. Emphasis should be placed on the continuity and the lack of qualitative difference between vandalism and "normal" or socially acceptable acts. This recommendation might appear at first to be counterintuitive. It certainly is contrary to the goals of most antivandalism campaigns, which strive to portray in most vivid terms the vandal as a decidedly different type of human being. Vandals are usually characterized in very derogatory terms, and are given credit for few desirable social and personality traits. We suggest that in material distributed about vandalism, reasons for the enjoyment of vandalism (according to aesthetic theory) should be identified and discussed. Labeling vandalism as not being substantially dissimilar to other, "normal" types of behavior might even result in a benign self-fulfilling prophecy. A better understanding of vandalism in the terms enunciated by aesthetic theory might be more effective than more strident campaigns.

We also offer the novel suggestion that destructive behavior may indicate that the perpetrator has a deep

interest in aesthetic activities. If this speculation is true, then the aesthetic interest of youngsters who enagage in vandalism might be redirected into psychologically equivalent but more socially acceptable pursuits, such as art. As a bridge between destruction and the regular curriculum, art classes could adopt a more general definition of aesthetics to encompass both constructive and destructive acts. Perhaps those persons who had initially obtained great pleasure from destruction could learn to enjoy and appreciate the more complex and subtle aesthetic experiences which are inherent in traditional forms of art.

Some acts of vandalism are enjoyable because they are engaged in only infrequently. Repetition would soon result in adaptation to that level of stimulation, reducing the pleasure derived from the experience. One method for bringing about such an adaptation would be to have an annual school-sponsored "smash-up" day for the students. At this time they would have the opportunity to engage in the destruction of objects under conditions of safety and adequate supervision. A variety of objects are appropriate: old cars, mechanical junk, glass, bottles, abandoned houses, or anything scheduled for demolition. After a full day of such effort, the trivial level of destruction involved in vandalism ought not to be a source of arousal and enjoyment.

Finally, a formal short course ("module") could be developed in the school to present psychological theories of aesthetics. Appropriate audiovisual material, exposition of theory, and empirical studies are readily available. All students should participate in such a course early in the middle school years. From this course students could learn to understand the psychological basis for the pleasingness and enjoyment derived from several forms of art. Destruction would be included. Students would learn that the same psychological variables are present in acts of destruction as in more traditional forms of aesthetics. They would get a better understanding of the underlying psychological factors contributing to the "fun" of vandalism. Through group discussions the psychological enjoyment that comes from engaging in vandalism could be explicitly identified as a widespread and normal response. By giving students a better understanding of the psychological bases of their behavior, perhaps more constructive behavior would ensue.

Finally, we should emphasize that the foregoing implications are based solely upon aesthetic theory and are not intended to be exhaustive. It should also be reiterated that we are not so bold as to propose that aesthetic theory has the complete or final answer to the problem of vandalism in the schools. Obviously, there are

many other crucial factors that are not addressed by this theory. In order to prevent vandalism in the schools, it is prudent to try to implement all the reasonable and feasible implications from every available theory. The strategy of preventive overkill has much to recommend it.

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